

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen


1999

Nebraska Summary: S281 New Holland 8184

Nebraska Tractor Test Laboratory

University of Nebraska-Lincoln, tractortestlab@unl.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>

 Part of the [Energy Systems Commons](#), [History of Science, Technology, and Medicine Commons](#), [Other Mechanical Engineering Commons](#), [Physical Sciences and Mathematics Commons](#), [Science and Mathematics Education Commons](#), and the [United States History Commons](#)

Laboratory, Nebraska Tractor Test, "Nebraska Summary: S281 New Holland 8184" (1999). *Nebraska Tractor Tests*. 2783.

<https://digitalcommons.unl.edu/tractormuseumlit/2783>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

SUMMARY OF OECD TEST 1885-NEBRASKA SUMMARY 281

NEW HOLLAND 9282 QUADRASYNC DIESEL

ALSO NEW HOLLAND 9184 QUADRASYNC DIESEL

12 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed(PTO speed - 1045 rpm)					
211.8 (157.9)	2200	14.61 (55.29)	0.488 (0.297)	14.50 (2.86)	
Standard Power Take-off Speed(997 rpm)					
229.0 (170.8)	2100	15.07 (57.03)	0.466 (0.283)	15.20 (2.99)	
Maximum Power (2 hours)					
233.6 (174.2)	2000	14.74 (55.78)	0.446 (0.271)	15.85 (3.12)	

VARYING POWER AND FUEL CONSUMPTION

211.8 (157.9)	2200	14.61 (55.29)	0.488 (0.297)	14.50 (2.86)	Air temperature
188.2 (140.3)	2301	13.91 (52.65)	0.523 (0.318)	13.53 (2.66)	68°F(20°C)
143.9 (107.3)	2344	11.58 (43.85)	0.570 (0.346)	12.42 (2.45)	Relative humidity
97.5 (72.7)	2384	9.30 (35.19)	0.674 (0.410)	10.49 (2.07)	91%
49.6 (37.0)	2427	6.97 (26.39)	0.994 (0.605)	7.12 (1.40)	Barometer
7.5 (5.6)	2462	4.98 (18.85)	4.728 (2.876)	1.51 (0.30)	28.77" Hg(97.41 kPa)

Maximum Torque - 746 lb.-ft. (1011 Nm) at 1269 rpm
Maximum Torque Rise - 47.6%
Torque rise at 1800 engine rpm - 30%

DRAWBAR PERFORMANCE FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power 4th(L4) Gear									
200.6 (149.6)	17320 (77.04)	4.34 (6.99)	2199	2.5	0.518 (0.315)	13.71 (2.70)	178 (81)	75 (24)	28.92 (97.92)
75% of Pull at Maximum Power 4th(L4) Gear									
159.2 (118.7)	12980 (57.75)	4.60 (7.40)	2309	1.8	0.567 (0.345)	12.52 (2.47)	178 (81)	75 (24)	28.92 (97.92)
50% of Pull at Maximum Power 4th(L4) Gear									
109.4 (81.6)	8665 (38.55)	4.73 (7.62)	2361	1.0	0.659 (0.401)	10.76 (2.12)	176 (80)	75 (24)	28.92 (97.92)
75% of Pull at Reduced Engine Speed 5th(M1) Gear									
158.5 (118.2)	12980 (57.74)	4.58 (7.37)	2014	1.7	0.492 (0.299)	14.42 (2.84)	174 (79)	64 (18)	28.95 (98.05)
50% of Pull at Reduced Engine Speed 5th(M1) Gear									
108.9 (81.2)	8655 (38.51)	4.72 (7.59)	2060	1.0	0.559 (0.340)	12.69 (2.50)	174 (79)	64 (18)	28.95 (98.05)

Location of Test: Prairie Agricultural Machinery Institute (PAMI), Portage La Prairie, Manitoba, Canada R1N 3C5

Dates of Test: January - September, 1999

Manufacturer: New Holland Canada Ltd. Versatile Farm Equipment Operations, Box 7300, 1260 Clarence Ave., Winnipeg, Manitoba, Canada R3C 4E8

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.852 **Fuel weight** 7.09 lbs/gal (0.850 kg/l) **Oil SAE** 15W40 **API service classification** CF-4 **Transmission and hydraulic lubricant** Esso Hydraul 56 fluid **Final drive lubricant** SAE 80W90 API GL-5 gear oil

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 45767565 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.488" x 5.315"(114.0 mm x 135.0 mm) **Compression ratio** 16.7 to 1 **Displacement** 505 cu in (8268 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one element **Muffler** vertical **Cooling medium temperature control** thermostat

CHASSIS: Type Four wheel drive with duals **Serial No.** D107959 **Tread width** rear 72.0"(1829 mm) and 129.2"(3282 mm) front 72.0"(1829 mm) and 129.2"(3282 mm) **Wheelbase** 133.0"(3380 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 2.76 (4.44) second 3.22 (5.19) third 3.76 (6.05) fourth 4.38 (7.05) fifth 5.00 (8.05) sixth 5.85 (9.42) seventh 6.82 (10.98) eighth 7.94 (12.79) ninth 10.37 (16.69) tenth 12.12 (19.51) eleventh 14.14 (22.76) twelfth 16.47 (26.50) reverse 3.57 (5.75), 4.18 (6.72), 4.87 (7.84), 5.67 (9.13) **Clutch** multiple wet disc hydraulically actuated by foot pedal **Brakes** caliper disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated **Power take-off** 1000 rpm at 2106 engine rpm **Unladen tractor mass** 24805 lb (11252 kg)

DRAWBAR PERFORMANCE **MAXIMUM POWER IN SELECTED GEARS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
2nd(L2) Gear									
191.2 (142.6)	25020 (111.3)	2.86 (4.61)	2147	10.8	0.550 (0.335)	12.89 (2.54)	174 (79)	68 (20)	28.96 (98.07)
3rd(L3) Gear									
208.7 (155.6)	24415 (108.6)	3.21 (5.16)	2000	7.9	0.505 (0.307)	14.06 (2.77)	174 (79)	72 (22)	28.93 (97.97)
4th(L4) Gear									
217.6 (162.3)	20950 (93.2)	3.90 (6.27)	2000	3.8	0.480 (0.292)	14.77 (2.91)	176 (80)	72 (22)	28.93 (97.97)
5th(M1) Gear									
217.9 (162.5)	18165 (80.8)	4.50 (7.24)	2000	2.8	0.482 (0.293)	14.72 (2.90)	176 (80)	72 (22)	28.93 (97.97)
6th(M2) Gear									
219.9 (164.0)	15535 (69.1)	5.31 (8.54)	2001	2.0	0.477 (0.290)	14.87 (2.93)	176 (80)	75 (24)	28.92 (97.93)
7th(M3) Gear									
219.8 (163.9)	13285 (59.1)	6.20 (9.99)	2001	1.4	0.476 (0.290)	14.90 (2.94)	177 (81)	75 (24)	28.92 (97.93)
8th(M4) Gear									
217.4 (162.1)	11260 (50.1)	7.24 (11.66)	1999	1.2	0.481 (0.293)	14.75 (2.91)	177 (81)	75 (24)	28.92 (97.93)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

Remarks: All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturers claim of 45 gal/min (170.3 l/min) remote hydraulic flow. The performance figures on this summary were taken from a test conducted under the OECD Code II test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1885**, Nebraska Summary 281, August 11, 2000.

Brent T. Sampson
Test Engineer

L.L. Bashford
M.F. Kocher
R.D. Grisso Jr.
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB **dB(A)**

At 75% load in 5th(M1) gear	78.4
Bystander	--

TIRES, BALLAST AND WEIGHT

Rear tires -No., size, ply & psi (kPa)
Front Tires - No., size, ply, & psi (kPa)
Height of Drawbar
Static Weight with operator -Rear
- Front
- Total

Tested Without Ballast

Four 20.8R38; **; 8(55)
Four 20.8R38; **; 12(83)
17.2 in (437 mm)
9885 lb (4485 kg)
15085 lb (6842 kg)
24970 lb (11327 kg)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: IVN

Quick Attach: None

Maximum Force Exerted Through Whole Range: 15285 lbs (68.0 kN)

i) Opening pressure of relief valve: NA

Sustained pressure of the open relief valve: 2885 psi (199 bar)

ii) Pump delivery rate at minimum pressure: 43.8 GPM (165.7 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 40.1 GPM (151.8 l/min)

Delivery pressure: 2305 psi (159 bar)

Power: 53.9 HP (40.2 kW)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (bar): 2800 (193)

Location: lift cylinder

Hydraulic oil Temperature °F (°C): 150 (65)

Location: hydraulic sump

Category: IVN

Quick Attach: None

SAE Test, system pressure - 2600 psi (179 bar)

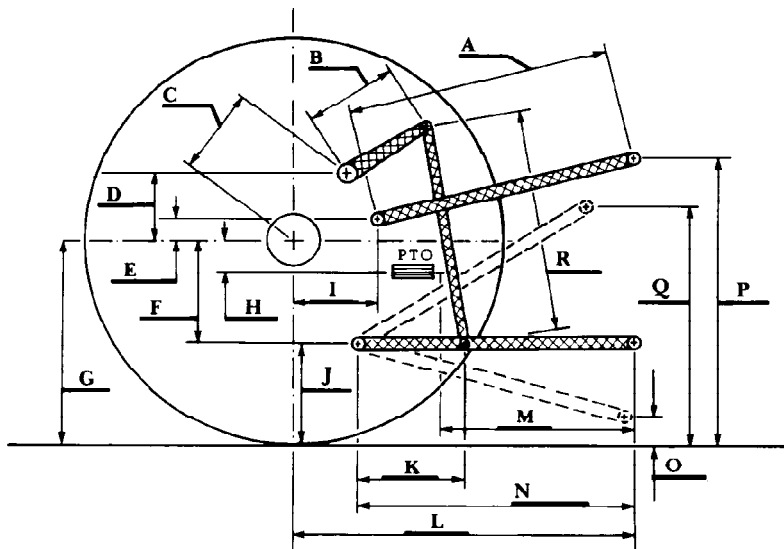
Hitch point distance

to ground level in. (mm)	8.0 (203)	19.4 (492)	27.2 (692)	35.1 (892)	44.1 (1120)
Lift force on frame lb.	25955	22535	20220	17905	13430
" " " " " (kN)	(115.4)	(100.2)	(89.9)	(79.6)	(59.7)

ASAE Test, system pressure - 2800 psi (193 bar)

Hitch point distance

to ground level in. (mm)	8.0 (203)	19.4 (492)	27.2 (692)	35.1 (892)	44.1 (1120)
Lift force on frame lb.	28025	24315	21820	19325	14465
" " " " " (kN)	(124.7)	(108.2)	(97.1)	(86.0)	(64.4)



HITCH DIMENSIONS AS TESTED - NO LOAD

	inch	mm
A	27.8	705
B	18.6	472
C	27.0	685
D	19.0	483
E	13.4	341
F	10.4	263
G	33.7	855
H	1.7	43
I	25.3	642
J	23.3	592
K	18.0	457
L	53.4	1356
M	25.3	718
N	43.0	1092
O	9.1	230
P	50.3	1277
Q	41.3	1050
R	33.1	842